WHAT IS CLAIMED IS:

1. A method for motion estimation in a motion-compensated video compression system, including:
   (a) applying at least two fast motion estimation search methods to a set of video images and selecting a candidate best match motion vector for each search method;
   (b) selecting a best motion vector from the candidate best match motion vectors; and
   (c) applying the best match motion vector to compress the set of video images.

2. The method of claim 1, wherein selecting a candidate best match motion vector for each search method includes:
   (a) applying an AC match criteria to determine an AC best match motion vector;
   (b) applying a DC match criteria to determine a DC best match motion vector; and
   (c) selecting the better match of the AC best match motion vector and the DC best match motion vector to be the candidate best match motion vector for the search method.

3. The method of claim 1, wherein each fast motion estimation search method is applied to subpixels.

4. The method of claim 1, wherein each fast motion estimation search method is applied to full pixels.

5. The method of claim 4, further including:
   (a) performing a sub-pixel motion search on the set of video images, based on the best motion vector, to generate a set of sub-pixel motion vectors; and
   (b) selecting, as the best match motion vector, the best motion vector from the set of sub-pixel motion vectors.

6. The method of claim 5, wherein selecting the best match motion vector includes:
   (a) applying an AC match criteria to the set of sub-pixel motion vectors to determine an AC best match sub-pixel motion vector;
   (b) applying a DC match criteria to the set of sub-pixel motion vectors to determine a DC best match sub-pixel motion vector; and
   (c) selecting the better match of the AC best match sub-pixel motion vector and the DC best match sub-pixel motion vector to be the best match motion vector.

7. The method of claim 1, further including:
   (a) performing a set of sub-pixel motion searches on the set of video images, based on the best motion vector for each fast motion estimation search method, to generate a set of sub-pixel motion vectors for each fast motion estimation search method;
   (b) selecting, from each set of sub-pixel motion vectors for each fast motion estimation search method, a best match sub-pixel motion vector; and
   (c) selecting, as the best match motion vector, the best motion vector from the best match sub-pixel motion vectors.

8. The method of claim 7, wherein selecting a best match includes:
   (a) applying an AC match criteria to determine an AC best match; and
   (b) applying a DC match criteria to determine a DC best match.

9. A method for determining the quality of motion vector determinations for a set of video images in a motion-compensated video compression system, including applying an AC

match algorithm in determining best match motion vector candidates for the set of video images.

10. A method for determining the quality of motion vector determinations for a set of video images in a motion-compensated video compression system, including:
(a) applying an AC match algorithm in determining a best match AC motion vector candidate for the set of video images;
(b) applying a DC match algorithm in determining a best match DC motion vector candidate for the set of video images; and
(c) selecting, as a best match, the better of the best match AC motion vector candidate and the best match DC motion vector candidate.

11. The method of claim 10, further including preferentially selecting the AC match algorithm in determining motion vectors for wide dynamic range and wide contrast range images.

12. The method of claim 10, further including preferentially selecting the DC match algorithm in determining motion vectors for images having changing contrast.

13. The method of claim 10, wherein the AC match algorithm has frequency components, and further including scaling the frequency components while applying the AC match algorithm to find a best match.

14. The method of claim 10, wherein the DC match algorithm uses at least an RGB difference match.

15. The method of claim 10, wherein the DC match algorithm uses at least a luminance match.

16. The method of claim 10, further including conveying the type of best match to a subsequent coding process.

17. A computer program, stored on a computer-readable medium, for motion estimation in a motion-compensated video compression system, the computer program comprising instructions for causing a computer to:

(a) apply at least two fast motion estimation search computer programs to a set of video images and selecting a candidate best match motion vector for each search computer program;

(b) select a best motion vector from the candidate best match motion vectors; and

(c) apply the best match motion vector to compress the set of video images.

18. The computer program of claim 17, wherein the instructions for causing the computer to select a candidate best match motion vector for each search computer program include instructions for causing the computer to:

(a) apply an AC match criteria to determine an AC best match motion vector;

(b) apply a DC match criteria to determine a DC best match motion vector; and

(c) select the better match of the AC best match motion vector and the DC best match motion vector to be the candidate best match motion vector for the search computer program.

19. The computer program of claim 17, wherein each fast motion estimation search method is applied to subpixels.

20. The computer program of claim 17, wherein each fast motion estimation search method is applied to full pixels.

21. The computer program of claim 20, further including instructions for causing a computer to:

(a) perform a sub-pixel motion search on the set of video images, based on the best motion vector, to generate a set of sub-pixel motion vectors; and

(b) select, as the best match motion vector, the best motion vector from the set of sub-pixel motion vectors.

22. The computer program of claim 21, wherein the instructions for causing the computer to select the best match motion vector include instructions for causing the computer to:

(a) apply an AC match criteria to the set of sub-pixel motion vectors to determine an AC best match sub-pixel motion vector;

(b) apply a DC match criteria to the set of sub-pixel motion vectors to determine a DC best match sub-pixel motion vector; and

(c) select the better match of the AC best match sub-pixel motion vector and the DC best match sub-pixel motion vector to be the best match motion vector.

23. The computer program of claim 17, further including instructions for causing a computer to:

(a) perform a set of sub-pixel motion searches on the set of video images, based on the best motion vector for each fast motion estimation search computer program, to generate a set of sub-pixel motion vectors for each fast motion estimation search computer program;

(b) select, from each set of sub-pixel motion vectors for each fast motion estimation search computer program, a best match sub-pixel motion vector; and

(c) select, as the best match motion vector, the best motion vector from the best match sub-pixel motion vectors.

24. The computer program of claim 23, wherein the instructions for causing the computer to select a best match include instructions for causing the computer to:

(a) apply an AC match criteria to determine an AC best match; and

(b) apply a DC match criteria to determine a DC best match.

25. A computer program, stored on a computer-readable medium, for determining the quality of motion vector determinations for a set of video images in a motion-compensated video compression system, the computer program comprising instructions for causing a computer to apply an AC match algorithm in determining best match motion vector candidates for the set of video images.

26. A computer program, stored on a computer-readable medium, for determining the quality of motion vector determinations for a set of video images in a motion-compensated video compression system, the computer program comprising instructions for causing a computer to:

(a) apply an AC match algorithm in determining a best match AC motion vector candidate for the set of video images;

(b) apply a DC match algorithm in determining a best match DC motion vector candidate for the set of video images; and

(c) select, as a best match, the better of the best match AC motion vector candidate and the best match DC motion vector candidate.

27. The computer program of claim 22, further including instructions for causing a computer to preferentially select the AC match algorithm in determining motion vectors for wide dynamic range and wide contrast range images.

28. The computer program of claim 22, further including instructions for causing a computer to preferentially select the DC match algorithm in determining motion vectors for images having changing contrast.

29. The computer program of claim 22, wherein the AC match algorithm has frequency components, and further including instructions for causing a computer to scale the frequency components while applying the AC match algorithm to find a best match.

30. The computer program of claim 22, wherein the DC match algorithm uses at least an RGB difference match.

31. The computer program of claim 2, wherein the DC match algorithm uses at least a luminance match.

32. The computer program of claim 22, further including instructions for causing a computer to convey the type of best match to a subsequent coding process.

33. A system for motion estimation in a motion-compensated video compression system, including:

(a) means for applying at least two fast motion estimation search methods to a set of video images and selecting a candidate best match motion vector for each search method;

(b) means for selecting a best motion vector from the candidate best match motion vectors; and

(c) means for applying the best match motion vector to compress the set of video images.

34. The system of claim 33, wherein the means for selecting a candidate best match motion vector for each search method includes:

(a) means for applying an AC match criteria to determine an AC best match motion vector;

(b) means for applying a DC match criteria to determine a DC best match motion vector; and

(c) means for selecting the better match of the AC best match motion vector and the DC best match motion vector to be the candidate best match motion vector for the search method.

35. The system of claim 33, wherein each fast motion estimation search method is applied to subpixels.

36. The system of claim 33, wherein each fast motion estimation search method is applied to full pixels.

37. The system of claim 36, further including:

(a) means for performing a sub-pixel motion search on the set of video images, based on the best motion vector, to generate a set of sub-pixel motion vectors; and

(b) means for selecting, as the best match motion vector, the best motion vector from the set of sub-pixel motion vectors.

38. The system of claim 37, wherein the means for selecting the best match motion vector includes:

(a) means for applying an AC match criteria to the set of sub-pixel motion vectors to determine an AC best match sub-pixel motion vector;

(b) means for applying a DC match criteria to the set of sub-pixel motion vectors to determine a DC best match sub-pixel motion vector; and

(c) means for selecting the better match of the AC best match sub-pixel motion vector and the DC best match sub-pixel motion vector to be the best match motion vector.

39. The system of claim 33, further including:

(a) means for performing a set of sub-pixel motion searches on the set of video images, based on the best motion vector for each fast motion estimation search method, to generate a set of sub-pixel motion vectors for each fast motion estimation search method;

(b) means for selecting, from each set of sub-pixel motion vectors for each fast motion estimation search method, a best match sub-pixel motion vector; and

(c) means for selecting, as the best match motion vector, the best motion vector from the best match sub-pixel motion vectors.

40. The system of claim 39, wherein the means for selecting a best match includes:

(a) means for applying an AC match criteria to determine an AC best match; and

(b) means for applying a DC match criteria to determine a DC best match.

41. A system for determining the quality of motion vector determinations for a set of video images in a motion-compensated video compression system, including:

(a) means for inputting the set of video images; and

(b) means for applying an AC match algorithm in determining best match motion vector candidates for the set of video images.

42. A system for determining the quality of motion vector determinations for a set of video images in a motion-compensated video compression system, including:

(a) means for applying an AC match algorithm in determining a best match AC motion vector candidate for the set of video images;

(b) means for applying a DC match algorithm in determining a best match DC motion vector candidate for the set of video images; and

(c) means for selecting, as a best match, the better of the best match AC motion vector candidate and the best match DC motion vector candidate.

43. The system of claim 42, further including means for preferentially selecting the AC match algorithm in determining motion vectors for wide dynamic range and wide contrast range images.

44. The system of claim 42, further including means for preferentially selecting the DC match algorithm in determining motion vectors for images having changing contrast.

45. The system of claim 42, wherein the AC match algorithm has frequency components, and further including means for scaling the frequency components while applying the AC match algorithm to find a best match.

46. The system of claim 42, wherein the DC match algorithm uses at least an RGB difference match.

47. The system of claim 46, wherein the DC match algorithm uses at least a luminance match.

48. The system of claim 42, further including means for conveying the type of best match to a subsequent coding process.